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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,694	09/07/2000	Aravind Padmanabhan	9028/322(H16-26318)	2388

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HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN, NJ 07962-2245

EXAMINER

EASTHOM, KARL D

ART UNIT	PAPER NUMBER
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2832

DATE MAILED: 06/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/656,694		PADMANABHAN ET AL.	
	Examiner		Art Unit	
	Karl D Easthom		2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-34 is/are pending in the application.
- 4a) Of the above claim(s) 19-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-18, 33 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4-5, 8, 14, 33 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Strott et al. Strott discloses the claimed invention at Fig. 1, with sensing elements 3, 12, 13 coupled to the front surface of insulating body 4 having connection material 9 in a plurality of openings thereof. In claim 8, 4 is glass. In claim 14, there are at least two materials, 4, 2 and/or 5. In claims 2 and 5, the heater can be any of the sensors since resistors must heat, or the heater 5 is "coupled" to the front surface of 4. In claim 35, the materials are substantially similar where the term is one of degree. In claim 33, the thermal conductivity is low where the term is one of degree.

3. Claims 1, 4, 8, 14, 33 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Mastromatteo et al. Mastromatteo discloses the claimed invention at Figs. 4-7, with sensing elements 24, 25 with heater 21 coupled to the front surface of insulating body 15 having connection material 14c, 22 in a plurality of openings thereof. In claim 4, it senses the gas environment, see the abstract. In claim 35, the materials are substantially similar where the term is one of degree.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-16 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram in view of Morimasa et al. The claimed invention is disclosed as noted below, except the heater and two thermal sensors, and the materials for the substrate of glass, and silicon. The noted arrangement is disclosed at Fig. 4 with sensors 9,10 and heater 8, while the substrate 2 is either silicon or photosensitive glass, see col. 2, lines 1-65, and col. 4, lines 24-35, as typical arrangements for thermal sensors, such that it would have been obvious to arrange the thermal sensor of Bertram et al. as a typical flow sensor having the typical materials for the purpose of forming a robust sensor, as disclosed at col. 1 of Bertram. In claims 8 and 9, highly melting and insulating are terms of degree deemed met by the materials noted. In claims 11-12, the type of materials are known as photosensitive glasses so that it would have been obvious to employ any type where a photosensitive glass is disclosed. The types are so well known as to have trademarks. Applicant also admits at page 13 that Pyrex is well known in the art for manufacturing glass components. Bertram discloses at Fig. 2 the sensor as an RTD temperature sensor 8, with connection material 4 in openings in the solid body 2. This is in the environment and detects temperature there - cl. 4. In claims 7 and 10, alumina is disclosed for the material of substrate 2. In claims 14-16, col. 2, lines 1-5 discloses more than two plugs 4 and holes. Or in claim 14, the insulator 10 and substrate 2 meet the claim as a second and first material, with the

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first material 2 below the sensing elements. Or as another alternative to claims 14-16, the insulator 10 is a first material plug, which is depicted as substantially cylindrical within the vias in Fig. 2, thus below the sensing film 8. Or, the insulator 10 is below the sensing elements when the device is upside down, such as happens during shipping or handling.

6. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram with Morimasa ; further in view of Gerblinger et al. The invention disclosed as noted above except the first material of glass. Bertram discloses a first material 10 that is insulating and hatched as glass, that is depicted as below the sensors 8 in the form of a plug at Fig. 2.

Gerblinger discloses using glass to protect platinum type sensors such as that of Bertram, so that it would have been obvious to employ glass to protect the sensors.

7. Claims 11-12 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram with Morimasa ; further in view of Kushida et al. The claimed invention is disclosed as noted above, except fused silica as a substrate . Kushida discloses fused silica - or quartz, as a substrate 14, such that it would have been obvious to employ the known substrate as a substrate for a temperature sensor such as that of Bertram, to alter the desired response time. As to claims 12 and 34, generically glass is claimed, so that the claims are met. As to Strott, applicant argues there is no plurality of sensors including a heater. This is not correct where there are at least three thermistors, one of which is a heater. Fluid flow can be sensed by such thermistors since fluid will cool the thermistors whose resistance will then change, sensing the fluid. That the combination of independent sensors with connections through the substrate for Bertram and

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Morimisa is not disclosed or suggested is not correct, where Bertram discloses the connections and Morimissa et al. the standard heater and independent sensors.

8. Applicant's arguments filed 5/19/03 have been fully considered but they are not fully persuasive. Applicant argues that the heater and sensors of Bertram are not independent. The argument is persuasive. As to lack of motivation, the references discloses thin film resistive temperature sensors. The ambient or fluid can be sensed by the devices in both references. Both references employ relative cooling or heating of a portion of a resistor element in order to detect temperature changes. Each reference is within the same field of endeavor, thin film resistive temperature detectors. It is hard to imagine a more narrowly defined field of endeavor. Further, both references are devoted to solving a particular problem such as making a robust temperature sensor having a thin film resistive sensor, see col. 1 of Bertram, and abstract of Morimisa.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703)308-3306. The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached on (703)308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


KARL D. EASTHOM
PRIMARY EXAMINER